

Attorney's Docket No.: 06618/457001 / CIT2986  
Application Number 09/576,654  
Amendment dated July 28, 2003  
Reply to Office action of March 27, 2003

REMARKS/ARGUMENTS

Reconsideration and allowance of the above application are respectfully requested. Claims have been amended as indicated in preceding section of this response.

The corrections of drawings as indicated in the Office Action are noted by Applicant. Such corrections simply conform the drawings to the text of the original specification. The corrected drawings will be filed at a later time. With respect to rejections to Claims 9 and 16 under 35 USC 112, first paragraph, Claim 9 has amended to obviate the rejection. As for Claim 16, various spacing monitoring mechanisms are known in the art and hence there is no need for specific description of any details on such mechanisms. Rejections to Claims 45-50 have been obviated by canceling the claims.

We now turn to rejections to the pending claims.

Claim 1 as amended recites an optical source in the probe module to produce a first optical beam directed at said probe to produce said probe polarization and a second optical beam directed to a sample to excite a sample polarization at a sample polarization frequency. The cited Holczer teaches the use of microwave excitation and hence certainly fails to disclose such

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features. Hence, Claim 1 as amended is patentable over the cited Holczer.

The Office Action indicates that the cited Ludeke discloses a use of a modulated optical signal 17 to excite a substrate 32 in AFM 12. However, Ludeke fails to disclose two different optical beams at two different frequencies to respectively excite sample and probe of Claim 1. Hence, Claim 1 as amended is patentable over Ludeke. Clearly, the combination of Holczer and Ludeke also fails to provide the proper teaching of each feature in Claim 1 as amended.

Notably, the cited Ludeke shows a chopper or amplitude modulator 15 to produce optical pulses from the light beam 17A. This aspect of Ludeke is entirely different from the acousto-optic modulator recited in Claim 9. As the Patent Office may appreciate from the specification, the acousto-optic modulator recited in Claim 9 does not in any way to modulate the amplitude of the optical beam to produce pulses. Instead, it shifts the relative frequency between the two output optical beams so the two output beams have different optical frequencies.

Based on at least the above arguments, all cited references, including Holczer and Ludeke, either individually or collectively, fail to teach each feature in Claim 1 as amended

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and its dependent claims such as Claim 9. Hence, these claims are patentable.

Claim 20 and its dependent claims are patentable over the cited Holczer and Takeda. For example, Claim 20 recites a radiation source to produce at least a probe excitation wave at a probe frequency and another excitation wave at a frequency different from said probe frequency but coherent with said probe excitation wave to produce an interference field. In Holczer, different signal sources 74 and 72 are used to produce different signals at different frequencies. However, such signals B1 and B<sub>MOD</sub> are not coherent to each other. Therefore, they cannot produce the recited interference field in Claim 20. Takeda fails to teach such features of Claim 20 as well.

Similarly, Claims 28 and its dependent claims are patentable based on the above arguments and their own merits.

It appears that the rejections are not based on teachings of the cited prior art because, as discussed above, the cited references do not provide the proper support for the rejections. Lacking such teaching in the cited art, it is respectfully suggested that the rejections appear to be based on the hindsight and with the benefit of the disclosure of the present

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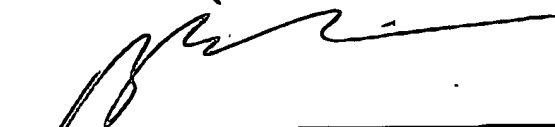
invention. Under either 35 USC 102 or 35 USC 103, such hindsight is not permissible.

Therefore, all pending claims are patentable and an official notice of allowance is respectfully solicited to issue at an early date.

Please apply the \$55.00 for a one month extension of time in filing this response and any other charges or credits, if appropriate, to Deposit Account No. 06-1050.

Respectfully submitted,

Date: July 28, 2003

  
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